MONTHLY WEATHER REVIEW.

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INTRODUCTION.

The MONTHLY WEATHER REVIEW for September, 1904, is based on data from about 3300 stations, classified as follows:

Weather Bureau stations, regular, telegraph, and mail, 167; West Indian Service, cable and mail, 4; River and Flood Service, regular 43, special river and rainfall, 190, special rainfall only, 56; voluntary observers, domestic and foreign, 2565; total Weather Bureau Service, 3025; Canadian Meteorological Service, by telegraph and mail, 20, by mail only, 13; Meteorological Service of the Azores, by cable, 2; Meteorological Office, London, by cable, 8; Mexican Telegraph Company, by cable, 3; Army Post Hospital reports, 18; United States Life-Saving Service, 9; Southern Pacific Company, 96; Hawaiian Meteorological Service, 75; Jamaica Weather Service, 130; Costa Rican Meteorological Service, 25; The New Panama Canal Company, 5; Central Meteorological Observatory of Mexico, 20 station summaries, also printed daily bulletins and charts, based on simultaneous observations at about 40 stations; Mexican Federal Telegraph Service, printed daily charts, based on about 30 stations.

Special acknowledgment is made of the hearty cooperation of Prof. R. F. Stupart, Director of the Meteorological Service of the Dominion of Canada; Mr. R. C. Lydecker, Territorial Meteorologist, Honolulu, Hawaii; Señor Manuel E. Pastrana, Director of the Central Meteorological and Magnetic Observatory of Mexico; Camilo A. Gonzales, Director-General of Mexican Telegraphs; Capt. S. I. Kimball, Superintendent of the United States Life-Saving Service; Lieut. Commander H. M. Hodges, Hydrographer, United States Navy; H. Pittier, Director of the Physico-Geographic Institute, San José, Costa Rica; Commandant Francisco S. Chaves, Director of the Meteorological Service of the Azores, Ponta Delgada, St. Michaels, Azores; W. N. Shaw, Esq., Secretary, Meteorological Office, London; Rev. José Algué, S. J., Director, Philippine Weather Service; and H. H. Cousins, Chemist, in charge of the Jamaica Weather Office; Señor Enrique A. Del Monte, Director of the Meteorological Service of the Republic of Cuba.

Attention is called to the fact that the clocks and self-registers at regular Weather Bureau stations are all set to seventy-fifth meridian or eastern standard time, which is exactly five hours behind Greenwich time; as far as practicable, only this standard of time is used in the text of the REVIEW, since all Weather Bureau observations are required to be taken and recorded by it. The standards used by the public in the United States and Canada and by the voluntary observers are believed to conform generally to the modern international system of standard meridians, one hour apart, beginning with Greenwich. The Hawaiian standard meridian is 157° 30′, or $10^h\ 30^m$ west of Greenwich. The Costa Rican standard meridian is that of San José, $5^h\ 36^m$ west of Greenwich. Records of miscellaneous phenomena that are reported occasionally in other standards of time by voluntary observers or newspaper correspondents are sometimes corrected to agree with the eastern standard; otherwise, the local standard is mentioned.

Barometric pressures, whether "station pressures" or "sea-level pressures," are now reduced to standard gravity, so that they express pressure in a standard system of absolute measures.

FORECASTS AND WARNINGS.

By Prof. E. B. GARRIOTT, in charge of Forecast Division.

Low barometric pressure prevailed over the North Atlantic in the vicinity of the British Isles during the first half of the month and at its close, and from the 19th to the 23d the barometer was low on the coasts of Spain and Portugal, and high over west-central continental Europe and the British Isles. In the vicinity of the Azores high pressure prevailed and the barometric changes were not marked.

Several disturbances of moderate strength passed from the American Continent over the ocean in high latitudes, and during the 14th and 15th a disturbance that first assumed marked intensity in the subtropical region north of the West Indies moved with extraordinary speed from the south Atlantic to the New England coast, and passed thence over Newfoundland, attended along the Atlantic seaboard by exceptionally heavy rain and strong gales, which attained hurricane force at points along the middle and south Atlantic coasts. Although the approach of this storm was announced by timely advices and warnings that prompted precautionary measures, a number of lives were lost, much damage was caused to seaside property, and many causualities to shipping occurred along the Atlantic coast of the United States. The maximum wind velocity reported in connection with this storm was 100 miles an hour from the northwest at Delaware Breakwater at 2:50 a. m. of the 15th, and the rainfall exceeded 5 inches at points in the Middle Atlantic States.

The storms of the Great Lakes were of moderate intensity, and no disturbance appeared in the Gulf of Mexico. On the Pacific coast the storm period had not begun, and extreme wind velocities were not experienced.

The first important frost-producing cool wave advanced from the Northwest to the middle Mississippi Valley during the 13th, 14th, and 15th, and from the 20th to the 22d a cool wave advanced from the Northwest to the Middle Atlantic States, attended by heavy frost and the lowest temperature on record for the season in the Middle Atlantic States, a reading of 36° being noted at Washington, D. C., on the morning of the 22d. Timely warnings were issued in connection with the damaging frosts of the month.

A remarkable warm wave visited California from the 6th to the 9th, and on the 7th and 8th, the maximum temperature reached 100° at San Francisco, and 100° to 108° in the central valleys of California.

During the closing days of September, destructive floods occurred in southern Colorado, New Mexico, and Oklahoma. At Trinidad, Colo., the losses were very great, and in parts of New Mexico the floods were the most extensive and destructive in the history of the Territory.

NEW ENGLAND FORECAST DISTRICT.

The chief and about the only unusual feature of the weather of the month was the general and destructive storm of the 14–15th. The storm came on very rapidly during the afternoon of the 14th, and prevailed with great fury through the night and the morning of the 15th. Heavy gales prevailed north to Eastport and from Highland Light, Mass., to Block